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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/604,644	08/06/2003	Tse-Hung Liu	AOIP0010USA	1643

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NORTH AMERICA INTERNATIONAL PATENT OFFICE (NAIPC)
P.O. BOX 506
MERRIFIELD, VA 22116

EXAMINER	
TANG, SON M	

ART UNIT	PAPER NUMBER
2632	

DATE MAILED: 03/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/604,644	LIU ET AL.	
	Examiner	Art Unit	
	Son M Tang	2632	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 August 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-4,6-10,12-14,16 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cohen [US 2003/0220721].

Regarding to claims 1, 4 and 6: Cohen discloses a method for controlling an operating temperature of a computer 10 comprising: monitoring a rotational speed of cooling fan by a fan power [60]; monitoring a vital temperature in the computer provides by an on-die thermal sensors [44, 54], and increasing fan power/speed when the vital temperature is substantially above threshold, and decreasing the operating clock speed of the processor and decreasing fan power/speed when vital temperature is below threshold [see Fig. 2a-3c and ¶ 0021, 0031 and 0033], and when the vital temperature cool down below the threshold, increases the operating clock speed and the fan speed would decreases as well [see ¶ 0028 last 3 lines and ¶ 0031 last 4 lines]. Although, Cohen does not specifically discloses first and second thresholds, however, as the claimed "first and second thresholds are equal", therefore it obvious that only one temperature threshold value uses for comparing. Cohen does not specifically disclose that the controlling and operating temperature of a video graphics array chipset. Since, computer 10 includes a numerous electronic components such as motherboard, sound card, CD-ROM and etc.,

therefore it would have been obvious of one having ordinary skill in the art at the time the invention was made, to recognize that thermal sensor can be positioned at any appropriate location or component that sensitive to temperature included VGA chipset.

Regarding to claim 2: Cohen disclose all the limitation as described in claim above, but not specifically discloses that fan and operating clock power/speed maintaining when vital temperature is equal to the first threshold. It is known in the art that, threshold value can be set or programmed as (greater/less than or equal to) certain value, therefore it is obvious of one having ordinary skill in the artisan would set the temperature threshold value as greater/less than or equal to, so that the value can be easy to calculate and precise.

Regarding to claim 3: Cohen disclose all the limitation as described in claim above, but lacks in specifically disclose an operating voltage of the processor when vital temperature is substantially below a third threshold; and decreasing an operating voltage of the processor when the vital temperature is substantially above the third threshold. Since the clock speed is relative to the operating voltage of the processor, such as increasing/decreasing clock speed requires increasing/decreasing the operating voltage of processor, therefore one having ordinary skill in the art would have found it obvious that to increase an operating voltage of the processor when vital temperature is below the threshold. Cohen fails to specify a third threshold, however the system uses programmable software to provide a required threshold level of cooling by the CPU 12 [as cited at ¶ 0021]. Therefore, it would have been obvious of one having ordinary skill in the art at the time the invention was made, to use software program to create as many as a first, second and third thresholds as user desired, since more threshold levels would provide better cooling monitoring.

Regarding to claims 7 and 9: Refer to consider on claims 1 and 3 above.

Regarding to claim 8: Refer to consider on claim 2 above.

Regarding to claim 10: Refer to consider on claim 1 above.

Regarding to claim 12 Refer to consider on claim 1 above.

Regarding to claim 13: Cohen discloses a cooling system for computer system comprising:

-a CPU processor 12 having an operating power controlled by an operating power control signal;

-a cooling fan 32;

-a fan logic (FSC) 60 for generating a fan and transmitting a fan control signal based on a vital temperature of a temperature transducer 44;

-a controller CPU 12 or other logic circuit for controlling the rotational speed of the fan [cited Fig. 2b and ¶ 0021];

-a power logic (TCC 45) for generating the operating the operating power control signal based on the vital temperature of the graphics processor and outputting the operating power control signal [cited ¶ 0022, 0024-0025 and specifically ¶ 0028 page 3, lines 9-17], Cohen does not specifically discloses a fan input/output module for transmitting a fan control signal from the controller to the fan. Since, fan control signal is being received and operated at the fan such as fan speed, thus it is obvious of one having ordinary skill in the art to recognize that, fan control signal must be received at the fan receiver prior to turn the fan, wherein the receiver constitutes of fan input/output module where is control the fan speed.

Regarding to claim 14: Cohen further discloses a clock speed circuit (clock 47].

Regarding to claim 16: Refer to consider on claim 3 above.

Regarding to claim 19: Refer to claim 1 above.

3. Claims 5,11,15 and 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cohen in view of Schumann et al. [US 6,006,168; Schumann].

Regarding to claims 5, 11, 15: Cohen disclose all the limitation as described in claim above, except for specifically discloses that fan and clock power/speed controlled by relations (thresholds) stored in a RAM or hard disk. Memory for storing threshold values in computer is known in the art, Schumann teaches a system comprises a cooling fan operating for CPU, includes a fan threshold register 28 uses for stored fan thresholds [see col. 5, lines 31-40]. It would have been obvious of one having ordinary skill in the art at the time of the claimed invention, to have a memory to store fan relations (thresholds) as suggested by Schumann, so user can be easy to modify the value by reprogramming the thresholds in the memory.

Regarding to claims 17-18: Refer to the considered of claim 5 above.

4. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cohen in view of Suzuki et al. [US 6,134,667; Suzuki].

Regarding to claim 20: Cohen disclose all the limitation as described in claim above, except for not specifically discloses a user interface for input control parameters to generate fan and operating power signals. Suzuki teaches a computer cooling controller comprises a user interface for allowing user to input threshold temperature values to generate fan control signal [as shown in Fig. 1, 21-22 and col. 15, lines 15-46]. It would have been obvious

of one having ordinary skill in the art at the time of the claimed invention, to have an user interface and display as taught by Suzuki to the system of Cohen, for the benefit of convenience and precisely.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kaminski et al. [US 2002/0059533], Cope et al. [US 5,121,291], Dai [US 6,714,890]; Meynard [US 2003/0229816] and Cooper et al. [US 6,778,453].

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Son M Tang whose telephone number is (571)272-2962. The examiner can normally be reached on 4/9 First Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel J Wu can be reached on (571)272-2964. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Son Tang

DANIEL WU
SUPERVISORY PATENT EXAMINER
3/18/05